

Sub Spec
Approved for
Entry
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SUBSTITUTE SPECIFICATION

BACKGROUND AND SUMMARY

[0001] The present disclosure relates to a full-jacket helical conveyor centrifuge including a rotatably disposed, metallic drum with a horizontal axis of rotation. Also included is at least one drive device for the drum. A helical conveyor is also included which is rotatably disposed at a differential rotational speed with respect to the rotational speed of the drum. The helical conveyor can be rotated by a gearing by the at least one drive device for the drum or by another device.

[0002] It is known to drive centrifuges in many different manners. In the field of full-jacket helical conveyor centrifuges, it has caught on to equip the helical conveyor and the drum respectively with a driving device in order to be able to control these two elements separately from one another without any tie to a fixed transmission ratio. Such a state of the art is known from German Patent Document DE-A-2811887 or DE 1732887.

[0003] For driving the drum, a belt drive is generally used which has been successful in practice but which requires a relatively large amount of space and therefore, because of frictional heat in the event of a belt slip, generates high temperature at the belts and the pulleys and is also often relatively loud. A demand therefore exists for alternative drive concepts where a belt drive is avoided.

[0004] For example, in the case of laboratory centrifuges, electromagnetic drives are also known; such as magnets in a rotating beaker glass. Furthermore, from European Patent Document EP 0 930 099 B1, an electromagnetic transmission for driving a laboratory centrifuge is known which is connected behind an electric motor but which is not suitable for larger centrifuges, such as full-jacket helical conveyer centrifuges. A spinning centrifuge in the manner of a magnetic drive is also illustrated in German Patent Document DE 74 26 623 U1.